

ROLLING BEARING FORMED OF CEMENTED STEEL

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Abstract of JP6117438

PURPOSE: To attain long life by specifying the carbon content of bearing rings and a rolling element formed of cemented steel, the hardness of a surface hardened layer and a core part, the ratio of surface hardened layer depth to the diameter of the rolling element, the residual austenite quantity of the surface hardened layer, the size of the tissue, and the residual carbide quantity.

CONSTITUTION: Each of bearing rings and a rolling element formed of cemented steel of 0.15-1.40% in carbon content is formed of a surface hardened layer of 0.80% or more in carbon content and HRC 58 or higher in Rockwell C hardness, and a core part of HRC 48 to 58 in the Rockwell C hardness. The ratio of surface hardened layer depth to the rolling element diameter is adjusted to 0.07 or more in the bearing ring. In addition, the residual austenite quantity of the surface hardened layer is to be 25-35%, the size of the residual austenite tissue is to be 5µm or less, and the residual carbide quantity is to be 10% or less. Since the deep surface hardened layer and high core part hardness are secured in the clean cemented steel, a long life can be attained even with the use under the lubricating condition of purified oil, and excellent rolling fatigue life can be manifested even to the fineness of foreign material in the lubricating oil.

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